

Fangruida:Sars 疾病和呼吸道传染性疾病各类冠状型病毒肺炎的诊疗防治以及动物冠状型病毒肺炎的发病机理传染源防治研究（方瑞达） Davis。K
冠状型病毒性肺炎生物标志物及治疗防治

Sars 疾病，呼吸道传染性综合症，非典型肺炎，各类冠状型病毒肺炎，流感行肺炎等呼吸道传染病冬春季节容易高发，传播扩散快，动物性病原或者其他病源，大多数与动物病毒感染传播有关，但并不排斥其他感染传播途径，包括各类病毒细菌等。冠状型病毒并不罕见，在各种动物家畜等体内都会发现此类病毒以及各种呼吸道传染性肺炎。对于各种细菌病毒的防治研究极为重要，传染病学流行病学等等。艾滋病，Sars，各种病毒性肺炎，细菌性肺炎，各种冠状型病毒肺炎，既是疑难症传染病（现阶段并没有特别有效的医疗技术和高效的药物疫苗等），但同时又是常见易发的常见病多发病（各种呼吸道综合症，各种肺炎，冠状型病毒性肺炎，流感行肺炎等），既要高度警觉防患，但又不必恐慌失措。既来之，则安之，既来之，则对之。当然，研判分析要严谨求实，对症治疗才能有效，高效，控制疫情，防止蔓延扩散传播，采用各种医疗技术包括各种可靠有效的药物等。医学要和兽医学紧密联系。人畜共患疾病尤其如此。冠状型病毒肺炎的生物标志物是很重要的诊断医治的关键，特别是各种感冒肺炎呼吸道感染疾病病毒性肺炎细菌性肺炎等确诊首要。再就是优选各类药物进入临床，确保有效和高效，减少死亡，抢救生命，至关重要。防止传播扩散，控制疫情蔓延。各种冠状型病毒包括新型冠状型病毒肺炎，病原主要是病毒细菌，主要来自动物，但也有其他的可能人体自身免疫缺失，其他病原体的侵入等混合而成。此类疾病的传播和动物家畜类似，速度快，病毒潜伏期几天到十几天不等，隐匿潜伏期也可能更长时间，患者年龄老幼男女均有，中老年死亡多，婴幼儿也有病例，而且也有无接触史和传染病史的病例出现。所以，对于新型冠状形病毒性肺炎要有全面准确的分析研究，包括病毒研究，传染途径和方式，病原体，病症表现，人体免疫能力缺陷，冬春季节影响，饮食，人与人之间接触感染，其他生物传播感染，毒化学材料的感染侵蚀，肺部呼吸道的的其它侵蚀等等，都需要严格细致分析，数据分析要准确。当然还有流行病学传染病学调查普查，地方疾病和传染病史调查，家族史病原调查和普查。Sars 最初发生在广东，新型冠状型病毒肺炎起始发生在武汉，这都需要认真思考和研究，包括家族，地球环境，动植物生长，气候条件，饮食生活习惯等等。

Fangruida: Diagnosis and treatment of various types of coronavirus pneumonia of Sars disease and respiratory infectious diseases and research on the pathogenesis of animal coronavirus pneumonia (Fang Ruida) Davis. K

Coronavirus pneumonia biomarkers and treatment

Sars disease, respiratory infectious syndrome, atypical pneumonia, various types of coronavirus pneumonia, influenza pneumonia and other respiratory infectious diseases are easy to occur in winter and spring, and spread rapidly, animal pathogens or other sources, most of which are related to animal virus infection Transmission is related, but it does not exclude other transmission routes of infection, including various types of virus bacteria. Coronaviruses are not uncommon, and they are

found in various animals and livestock, as well as various respiratory infectious pneumonias. It is extremely important to study the prevention and treatment of various bacterial viruses, such as epidemiology and epidemiology. AIDS, Sars, various viral pneumonias, bacterial pneumonias, and various coronavirus pneumonias are not only infectious diseases (at this stage, there are no particularly effective medical technologies and efficient drug vaccines, etc.), but they are also common. The most common diseases (various respiratory syndromes, various pneumonias, coronavirus pneumonia, influenza pneumonia, etc.) must be highly vigilant and prevent panic. When it comes, it will be safe, and when it comes, it will be right. Of course, research and analysis must be rigorous and realistic, and symptomatic treatment can be effective and efficient, control the epidemic, prevent spread and spread, and use various medical technologies, including various reliable and effective drugs. Medicine must be closely linked to veterinary science. This is especially true for zoonotic diseases. Coronavirus pneumonia biomarkers are very important for diagnosis and treatment, especially for the diagnosis of various pneumonia, respiratory infections, viral pneumonia, bacterial pneumonia and so on. Then it is important to select various drugs to enter the clinic, ensure effectiveness and efficiency, reduce deaths and save lives. Prevent spread and control the spread of the epidemic. Various coronaviruses include new coronavirus pneumonia. The pathogens are mainly viral bacteria, mainly from animals, but there are other possible combinations of human autoimmune deficiency and the invasion of other pathogens. The spread of such diseases is similar to that of animals and livestock. The speed of virus incubation varies from a few days to a dozen days, and the incubation latency may be longer. Patients are old and young, male and female, and there are many deaths in middle and old age. In addition, there is a history of contact and infectious diseases. Therefore, there must be comprehensive and accurate analysis and research on new coronavirus pneumonia, including virus research, routes and methods of transmission, pathogens, disease manifestations, human immunodeficiency, winter and spring effects, diet, and contact infection between people. , Other biologically transmitted infections, infections of toxic chemicals, other erosions of the lungs and respiratory tract, etc., all need to be analyzed carefully and the data must be accurate. Of course there are epidemiological surveys, surveys of local diseases and infectious diseases, family history pathogens surveys and censuses. Sars first occurred in Guangdong, and the new coronavirus pneumonia began to occur in Wuhan. This requires careful consideration and research, including family, global environment, animal and plant growth, climatic conditions, eating habits and so on.

NewCoronavirus(2019-nCoV)andCoronaviralResearchandDrugTherapy(Fangruida) (Editor: Vott.G
17 February 2020 Geneva)

New Coronavirus (2019-nCoV) and Coronavirus Research and Drug Therapy (Fang Ruida)

---- Various Coronavirus Pathology Pharmacology and Symptomatic Treatment Emergency
Medicine Technology 2019

Keywords virus naturally occurring coronavirus quantum physical chemistry

Coronary specific respiratory disease pneumonia

Clinical efficacy of pneumococcal vaccine combined with viral genetic and mutant virus
suppression and drug resistance

Coronavirus-specific immunity Coronavirus-specific respiratory infections (2019-nCoV pneumonia,
etc.) and Sars virus-specific immunity and defense

Homology, heterogeneity, genetics, and variability of Sars disease and 2019-nCoV acute
respiratory diseases (new virus, pneumonia)

Cases and special cases of various coronavirus pneumonias

Coronavirus genetic variation and evolutionary replication

Coronavirus anti-epidemic and clinical application of pneumonia vaccine development

Pneumococcal vaccine Antiviral drugs Respiratory pneumonia drugs Gene drugs Plant drugs
Immune drugs Compound drugs and so on.

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Casesandspecialcasesofvariouscoronaviruspneumonias

GeneticVariationandEvolutionaryReplicationofCoronaviruses

Coronaryvirusdruganti-epidemicandclinicalapplicationofpneumoniavaccinedevelopment

2020v1.0MultilingualGlobalElectronicVersionMobilereadingversion2020v.1.3version

***** As we all know, severe respiratory infectious diseases (Sars, 2019-nCoV, etc.) are the
most harmful infectious diseases in the world that are easily spread and spread. Various
coronavirus pneumonias have become major threats and challenges facing humans. Once an
outbreak occurs, the consequences are extremely serious and can be imagined without effective
prevention and treatment. Like the major plagues that have occurred in human history, plague,
smallpox, rabies, etc., caused huge disasters, killing hundreds of thousands and millions of people.

1. Microbiology and viruses Microorganisms are closely related to human health. Most
microorganisms are harmless to the human body. In fact, the outer surface (such as the skin) and
the inner surface (such as the intestine) of the human body are inhabited by many normal and
beneficial flora. They occupy these surfaces and produce natural antibiotics that inhibit the

invasion and growth of harmful bacteria; they also assist in the absorption or personal manufacture of some essential nutrients such as vitamins and amino acids. Imbalances in these flora (such as antibiotic abuse) can lead to infections or nutritional deficiencies. On the other hand, many diseases of humans and animals and plants are caused by microorganisms. These microorganisms are called pathogenic microorganisms or pathogens. Important human pathogenic microorganisms are listed in the table below. Names of major human pathogenic microbial diseases

Pathogens	Number of global infections (carriers)	Number of new cases per year	Number of deaths per year
Tuberculosis	Mycobacterium tuberculosis ~ 2 billion people (one third of the world's population)	8.81 million cases (2003[1])	1.75 million people (2003[2])

AIDS	Human Immunodeficiency Virus	42 million	5.5 million cases	3.1 million
	2.7 million cases of Shigella, Shigella, Escherichia coli, etc.	1.9 million		

Malaria	Plasmodium	3-5 million cases	1 million
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Other commonly heard pathogenic microorganisms are also cited

Human beings live and reproduce in nature. Bacteria and viruses, as well as countless microbes, have a great relationship with humans. They are directly related to the health and safety of human life. Many diseases of humans, animals and plants have important implications for this. It is undeniable that the role of bacteria and viruses in natural evolution, in particular, has a significant impact on the structure of biological macromolecules of organisms. At the same time, they also have great threats and harms to humans, animals and plants. It's proof. HCoV-229E, HCoV-OC43, HCoV-NL63, HCoV-HKU1, SARS-CoV (causes severe acute respiratory syndrome) and MERS-CoV (causes Middle East respiratory syndrome). Biologists, medical scientists, veterinarians, pharmacists, and virologists have carried out a lot of research and discovery in the face of these viruses that seriously threaten human life and health. Experimental research on viruses and coronaviruses has yielded many results.

Microorganisms are mainly divided into the following categories: (see Master List of Taxonomy)

Prokaryote Bacteria Archaea

Eukaryotic microorganism Fungi Protozoan Algae

Acellular organism	Virus	Virusoid	Viroid
Prion (also known as prion, proteinaceous infectious particles, prion)			

Soil microorganisms are microorganisms that exist on the surface of the ground or between the soil particles and the surface of the particles. Various microorganisms such as bacteria, actinomycetes, ascomycetes, basidiomycetes, yeasts, algae, and protozoa can be observed in the soil. Its species and number vary significantly with soil depth, hydrogen ion concentration, temperature, humidity, and season. Algae perform photosynthesis on the ground surface or the soil layer near the ground surface. Nitrifying bacteria, iron bacteria, and sulfur bacteria perform chemical synthesis. Other microorganisms support organic nutrition. In deep soil and other special conditions, there are also inorganic nutritional bacteria that perform special chemical synthesis. Bacteria are mostly distributed in neutral to weakly alkaline soil, aerobic bacteria are mostly distributed in the upper soil layer, and anaerobic bacteria are mostly distributed in the lower soil layer. Fungi are mostly distributed in acid soil. Bacillus subtilis, Pseudomonas, Clostridium bacillus, E. coli, cellulolytic bacteria, actinomycetes, and various fungi, all live on organic nutrition and can degrade soil organic matter. Ecosystem) plays a major role in the material cycle. Soil respiration caused by soil microorganisms

is related to the carbon cycle, while nitrogen fixation, nitrification, and denitrification caused by soil microorganisms are related to the nitrogen cycle. The nutrient salts maintained in the living body are decomposed and mineralized by soil microorganisms, and re-transformed into a form that can be used by plants. S. A. Waksman attaches great importance to the biological antagonism caused by the presence of antibacterial substances in the soil microbial society. Non-cellular microorganism including viruses and prions. The virus has no cell structure and is only composed of protein coats enclosing nucleic acids, such as hepatitis A virus and SARS coronavirus. Prion is an infectious protein molecule that can cause chronic degeneration of animal and human brain tissues, such as Mad Cow disease and Kuru disease in humans.

Prokaryotic cells Naked DNA is coiled to form the original nucleoplasm, without nuclear membrane and organelles, including bacteria, rickettsia, chlamydia, mycoplasma, and spirochaete, which belong to the broad category of bacteria.

Eukaryotic cells Including fungi and protozoa. Such microorganisms have a nuclear membrane and complex organelles, such as Plasmodium causing malaria and mold causing skin diseases.

The World Health Organization announced that a variant of the coronavirus has been officially identified as the pathogen that causes severe acute respiratory syndrome. Scientists say that the variant coronavirus is closely related to the influenza virus, but it is very unique. It has never been found in humans before. Scientists have named it "SARS virus" (SARS is the English abbreviation of "SARS" scientific name). According to Hong Kong health officials, atypical pneumonia is usually caused by viruses such as influenza viruses, adenoviruses and other respiratory viruses. Atypical pneumonia may also be caused by an organism. Coronavirus infections are very common all over the world. Coronavirus antibodies are common in the population, and adults are higher than children.

According to the World Health Organization, there are many types of coronaviruses, and viruses that cause the common cold and viruses that cause SARS are both coronaviruses.

Severe Acute Respiratory Syndrome Coronavirus 2 (English: Severe Acute Respiratory Syndrome Coronavirus 2, abbreviation: SARS-CoV-2) is a subtype of the coronavirus type B coronavirus belonging to the coronavirus family of severe acute respiratory syndrome. The enveloped positive-stranded single-stranded RNA, which caused the 2019 coronavirus disease (COVID-19) to erupt at the end of 2019. Its gene sequence and SARS virus and Middle East respiratory syndrome virus belong to the same lineage but different evolutionary branches. During the outbreak in mid-January 2020, the virus was discovered after nucleic acid testing and genome sequencing

of a positive patient sample. Patients infected with the virus do not currently have unique clinical symptoms. There are

no vaccines or specific drugs against the virus. It is effective, but can use existing antiviral drugs to alleviate the disease. The World Health Organization has named it 2019 New Coronavirus (2019-nCoV). Beginning in December 2019, the outbreak of pneumonia caused by this virus has spread to more than 20 countries around the world after three months, with approximately 70,000 patients, and the number continues to increase. In the past, newly discovered coronaviruses will be temporarily referred to as new coronaviruses, including the

coronaviruses that caused the Middle East Respiratory Syndrome (MERS) and their conditions that were discovered in 2012. They have been called "new coronaviruses" and "new pneumonias". The World Health Organization is tentatively named Novel Coronavirus ("New Coronavirus"), abbreviated 2019-nCoV. On February 11, the International Virus Classification Commission officially named the virus "SARS-CoV-2" (Severe Acute Respiratory Syndrome Coronavirus 2), and the diseases caused by it were recognized by the World Health Organization Coronavirus Disease 2019 (English: Coronavirus Disease 2019, abbreviation: COVID-19)

The new coronavirus is a single-stranded positive-stranded RNA virus with an envelope and no segmentation.

The particles are round or oval in shape and the diameter is about 60 to 140 nm. The genome of this virus is about 30,000 nucleotides in length. The gene sequence shows that SARS-CoV-2 belongs to the Betacoronavirus Lineage β (Sarbecovirus) evolutionary tree with a long branch. Coronaviruses found in Chinese chrysothrix head bats are similar, such as MERS-CoV or SARS-CoV. On January 27, 2020, the Chinese Center for Disease Control and Prevention isolated the first new type of coronavirus. [In the case of in vitro culture of the organism, the culture period takes about 6 days. A genetic study led by the China Centers for Disease Control and Prevention showed that 9 types of genotypes were found in 13 new coronavirus samples, with variable translation concentrated. Gene sequencing of the SARS-CoV-2S protein-mediated receptor binding region and membrane fusion region, respectively, revealed that it has 93% homology compared to the membrane fusion regions of CoVZC45 and CoVZXC21. Only 68% homology. In the analysis of homology modeling, SARS-CoV-2 and SARS-CoV both have 50 conserved amino acids in RBD, and the external substructures of RBD are very similar.

Some studies have used the genetic sequence of the new coronavirus WIV04 to compare with another type of SARS variant Chinese chrysothrix head bat coronavirus RaTG13 (Bat-CoV RaTG13) and found that the similarity between the two is 96%. A study of OC43 and HKU1 in the alpha coronavirus gene lineage α showed that despite clade and its limited host conductance, lectins in the hemagglutinin esterase protein of human coronavirus under multiple evolutions

The domain was almost completely deleted, instead this protein domain was retained in animal coronaviruses. Physiological function .

The picture shows the genome map of a new coronavirus isolate Wuhan-Hu-1. According to the existing knowledge, the virus is thermally sensitive and can be inactivated by exposure to ultraviolet light or at a high temperature of 56 ° C for 30 minutes. At the same time, the use of lipid solvents such as ether, 75% ethanol, chlorine-containing disinfectant, peroxyacetic acid, and chloroform can effectively inactivate the virus, and chlorhexidine cannot effectively inactivate the virus. [12] Most of the understanding of the physical and chemical properties of coronavirus comes from the research on SARS-CoV and MERS-CoV. The new coronavirus can be transmitted to humans through animals as an intermediary, and has the ability to pass from person to person. The new coronavirus has been proven to have only 79% similarity to the SARS-CoV gene, and it can use human ACE2 as a receptor to bind to the lungs through respiratory epithelial cells for replication. T lymphocytes. However, some studies have pointed out that the role of the new coronavirus on the ACE2 receptor is different from that of SARS. The key amino acid residues in its RBD are variable. It is known that the entry of coronavirus S proteins such as SARS into target cells depends on the binding of ACE2 receptor

and the activation of S protein by cellular protease. The binding of SARS S protein to its receptor ACE2 is triggered by the cell serine protease TMPRSS2. A new coronavirus with 76% amino acid identity is suspected of having similar functions. [In the existing experiments and observations, the similarity of the sequence and transmission pathway of the new coronavirus and SARS cannot confirm the similar biological characteristics between the two. A preliminary study compared multiple congeners including SARS, MERS, and the new coronavirus, and found that the sequence suspected of RBM in the new coronavirus RBD responsible for binding to ACE2 is the same as SARS, and in the rest cannot be bound by ACE2. The same sequence was not found in Bat-CoV. Studies have shown that when experimental new coronavirus enters Caco-2 cells, the serine protease inhibitor camustine against TMPRSS2 is used to effectively prevent the virus from invading. In contrast, E64d, a cathepsin B / L inhibitor, is found in 293T cells. No effect on. The results of this experiment indicate that the new coronavirus also triggers the S protein by TMPRSS2.

In a study on the binding of coronavirus and ACE2 receptors, some researchers pointed out that ACE2 plays a dual role in the process of virus infection in humans. When the new coronavirus invades the human body, because the expression of ACE2 itself in colon cells is positively related to human immunity and regulating viral infection, it will activate the renin-angiotensin system (RAS) because of the down-regulation of the virus. Because RAS is related to key signs such as blood pressure in humans, ACE2 not only mediates coronavirus, but also leads to further decline in human immunity.

The new coronavirus is considered to be generally susceptible to the population. The elderly and those with underlying diseases are more severely infected, and children, infants, and young children are relatively easily infected. Relevant research shows that the main way of virus infection is to invade human respiratory epithelial cells. According to different studies, the new coronavirus can be transmitted through respiratory droplets, aerogels formed by droplets, skin contact or direct contact with virus-containing secretions, and can enter the body from eyes, nose, and mouth. [The sources of infection seen so far are mainly patients with new types of coronavirus infection, and asymptomatic infection may also become the source of infection. [While gastrointestinal exposure to pathogens is also suspected of transmission, this pathway has not been proven. It is known that the new coronavirus can be found in human respiratory epithelial cells in about 96 hours and has the ability to infect.

In view of the current lack of vaccines and special-effect drugs, the widespread consensus of the World Health Organization, the Chinese Centers for Disease Control and Prevention, and the United States Centers for Disease Control and Prevention is: do not go to crowded places, and recommend daily preventive measures to help prevent the spread of respiratory viruses, avoid eating fresh or undercooked animal products, and avoid active or passive exposure to the virus. Preventive measures include: effective hand hygiene (coughing, sneezing, washing hands after risky activities such as coughing, sneezing, before and after meals, going to the bathroom, contact with live animals, etc.); use tissue paper or bend your elbows when coughing or sneezing. Get up to cover your nose and mouth, then throw used paper towels to the designated place and wash your hands effectively; avoid close contact with anyone with suspected symptoms such as fever and cough; the general public should wear a mask in high-risk environments, such as in a hospital or outbreak center area; If you are sick, please seek medical treatment promptly.

and bring a medical mask for effective isolation, and please do not spread it elsewhere; follow good food safety practices to avoid cross-infection of food; do not touch eyes with unwashed hands, nose and mouth.

The new coronavirus is a single-stranded positive-stranded RNA virus with an envelope and no segmentation. The particles are round or oval in shape and the diameter is about 60 to 140 nm. [22] [12] [23] [24] The genome of this virus is about 30,000 nucleotides in length, and the gene sequence of [11] [25] [26] shows that SARS-CoV-2 belongs to the genus B coronavirus Betacoronavirus Lineage β (Sarbecovirus) is a long-branched virus in the phylogenetic tree [27], which is similar to the coronavirus found in Chinese chrysanthemum, such as MERS-CoV or SARS-CoV. [11] On January 27, 2020, the Chinese Center for Disease Control and Prevention isolated the first new type of coronavirus.

In the case of biological in vitro culture, the culture period takes about 6 days. A genetic study led by the China Centers for Disease Control and Prevention showed that the new coronavirus is 86% similar to existing SARS-like variants (sequence: bat-SL-CoVZC45, MG772933.1). Other studies have further compared the virus genes of the same genus, and concluded that the shared source of the new coronavirus and SARS and SARS-like variants is HKU9-1. One study pointed out that the novel coronavirus and SARS-like CoVZC45 and CoVZXC21 can achieve 89% sequence identity. We have observed that there are 9 genotypes in 13 new coronavirus samples, with variable translation concentration. Gene sequencing of the SARS-CoV-2S protein-mediated receptor binding region and membrane fusion region, respectively, revealed that it has 93% homology compared to the membrane fusion regions of CoVZC45 and CoVZXC21. Only 68% homology. In the analysis of homology modeling, SARS-CoV-2 and SARS-CoV both have 50 conserved amino acids in RBD, and the external substructures of RBD are very similar.

New coronavirus infections can be classified as mild, common, severe, and critically severe according to clinical symptoms. Mild patients have mild clinical symptoms and no pneumonia on imaging. Common patients have symptoms such as fever and respiratory tract. Imaging shows pneumonia. One of the following symptoms can be identified as a severe patient: respiratory distress $RR \geq 30$ times / min; resting state means oxygen saturation $\leq 93\%$; arterial blood oxygen pressure (PaO_2) / oxygen concentration (FiO_2) ≤ 300 mmHg. One of the following symptoms can be identified as critically ill patients: respiratory failure and requiring mechanical ventilation; a state of shock; combined with other organ failure requires ICU monitoring and treatment. pathology Thoracic tomography was performed on the patient and imaging abnormalities were observed. Early patients will have multiple small patchy shadows and interstitial changes in the lungs, which are evident in the extrapulmonary zone. After development, patients with pneumonia were observed with multiple ground-glass and infiltrates. In severe cases, it will further develop sublobar or lobar pulmonary consolidation, and pleural effusion is rare. A radiological study noted that at least 30% of patients with acute respiratory distress syndrome were expected due to the similarity between the new coronavirus and SARS and MERS viruses. CT results showed that most patients had dual features of ground glass shadow and pulmonary symptoms. Blood tests on critically ill patients show that peripheral white blood cells and lymphocytes are reduced in the early stages of onset, and some patients may have increased liver enzymes, lactate dehydrogenase (LDH), muscle enzymes, and myoglobin; some critically ill patients can see troponin increase. Most patients had elevated C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) and normal procalcitonin. In

severe cases, D-dimer increases and peripheral blood lymphocytes progressively decrease [49]. IL-2, IL-7, IL-, GCSF, IP10, MCP1, MIP1A and TNF- α were also higher than normal values. It is currently speculated that the new coronavirus, like other coronaviruses, will stimulate the patient's innate immune system, causing a large amount of cytokine to be released in the body, causing a cytokine storm and an acute inflammatory response. This can lead to weaker blood vessels throughout the body, triggering acute respiratory distress and multiple organ failure. [48] [87] Because there is no effective targeted treatment for the virus, supportive treatment is performed in clinical practice with the goal of maintaining patients' life indicators. In the updated diagnosis and treatment plan officially issued by China, in addition to conventional treatment methods such as oxygen, drugs such as nebulized alpha-interferon, lopinavir, and ribavirin can be used to suppress the worsening of the disease. For patients with critical illness and severe respiratory distress symptoms, ECMO and other in vitro life-sustaining treatments can be clinically applicable. [New cases have reported that timely use of antibiotics to prevent further infections has a positive effect on patients with low immune capacity, and strengthening immune support treatment can effectively reduce related complications and mortality. The report suggests that intravenous immunoglobulin can be used to increase resistance in critically ill patients and use steroids to shorten treatment time. A new experimental broad-spectrum antiviral drug is believed to effectively inhibit the replication of SARS and MERS viruses in respiratory epithelial cells. According to a 2020 study, the combination of Radixivir and interferon IFN β has a significant effect on MERS. Although the drug is still in a phase III clinical trial against Ebola virus, there is speculation that it is the best drug for new coronaviruses today. The clinical manifestations of the disease are generally mild, similar to the symptoms of mycoplasma pneumonia. Onset is slow, with headache, fatigue, fever, cough, and a small amount of sticky sputum. Signs are often absent. X-ray examination of the lungs showed spotty, flaky, or even shadows. The total number of white blood cells can be normal, decreased or slightly increased. The course of disease is usually 1 to 2 weeks. In patients with immunodeficiency, viral pneumonia is often more severe, with persistent high fever, palpitations, shortness of breath, cyanosis, extreme failure, and can be accompanied by shock, heart failure, and azotemia. Due to alveolar interstitial and alveolar edema, respiratory distress syndrome can occur in severe cases. Physical examination may have wet rales. X-ray examination showed diffuse nodular infiltration, which was more common in two-thirds of the lung field.

Etiological examination Virus culture is difficult and it is not easy to carry out routinely. Only sputum smears of patients with pneumonia can find scattered bacteria and a large number of nucleated cells, or no pathogens can be found. The possibility of viral pneumonia should be suspected.

2. Serological examination In the acute and recovery phases of serum, the antibody titer of the complement binding test, neutralization test or serum inhibition test is increased by 4 times or more. In recent years, serum-specific IgM antibodies have been used to monitor the virus, which can help early diagnosis. Immunofluorescence, enzyme-linked immunosorbent assay, enzyme-labeled histochemical method, horseradish peroxidase-anti-horseradish peroxidase method, etc., can be used for rapid virus-specific rapid diagnosis.

3. White blood cells The count is normal, slightly high, or low, and the erythrocyte sedimentation is usually in the normal range. The white blood cells seen in

the sputum smear are mostly monocytes, and the sputum culture often does not grow with pathogenic bacteria.

4. Details of deaths from novel coronavirus pneumonia 病例 Death cases (data quoted from clinical death cases officially released by the China Health Council and other medical institutions) The youngest cases were 48 years old and 89 years old. They had a history of chronic diseases such as cirrhosis, myxoma, hypertension, diabetes, coronary heart disease and so on. According to the published contents, all death cases came from Hubei Province. For example, Hu XX, female, 80 years old, became ill on January 11, 2020. He was admitted to China Resources Wuhan Iron & Steel General Hospital on January 18, 2020 due to fever, cough, wheezing, and dyspnea. He was transferred to Wuhan Jinyintan Hospital on January 20, 2020 because of a new coronavirus positive. He has a history of hypertension for more than 20 years, a history of diabetes for more than 20 years, and a history of Parkinson's disease. After admission, she was in critical condition, intensive care, anti-infection, ventilator-assisted breathing, and symptomatic supportive treatment. However, the patient's condition did not improve, persistent hypoxemia, unconsciousness, mechanical ventilator-assisted breathing, invalidated after rescue at 16:00 on January 22, 2020, and clinical death was declared. Yun Yin XX, female, 48 years old, had previous diabetes and cerebral infarction. On December 10, 2019, there was no cause of fever (38 ° C), sore body and fatigue, and cough and sputum gradually appeared. Anti-infective treatment in primary hospitals did not improve for 2 weeks. On December 27th, chest tightness and shortness of breath occurred. After the activity, it was obvious. Tongji Hospital was given non-invasive ventilation and conventional anti-infective treatment. The condition still worsened. On December 31st, she was transferred to Jinyintan Hospital and given symptomatic treatments such as high-flow oxygen inhalation of nasal catheter. Hypoxia condition has not improved significantly, and the condition is still worsening. On January 14, 2020, chest CT showed diffuse mechanized changes in both lungs, some with traction bronchiectasis, especially in the lower lungs. At 11:50 on January 20th, tracheal intubation was performed, and analgesia and sedation were given. The terminal oxygen saturation and blood pressure continued to decline, and then the heart rate decreased. Eventually, the rescue failed. Zhang Zhang XX, male, 81 years old, was admitted to Wuhan First Hospital on January 18, 2020 due to fever for three days. Admission to the chest CT showed infectious lesions in both lungs. Considering viral pneumonia, the patient's renal function and pulmonary infection continued to worsen. On the morning of January 22, 2020, consciousness gradually appeared, and the respiratory heart rate and blood pressure continued to decline. The patient's family He refused rescue measures such as chest compressions and tracheotomy. The patient stopped breathing at 10:56 on January 22 and declared clinical death. Atlas

Male, 61 years old, was admitted to the hospital with respiratory failure, severe pneumonia, and had abdominal tumors and chronic liver disease. The patient purchases goods from the South China Seafood Market in Wuhan. After admission to the hospital, symptomatic support, anti-infection, ventilator-assisted breathing, continuous ECMO in vitro life support, and other treatments were not improved. On January 9, 2020, the heartbeat stopped and she died after rescue. The results of the etiology test indicated that the new coronavirus was positive for nucleic acid. The deaths were diagnosed as severe pneumonia, acute respiratory distress syndrome (severe), septic shock, multiple organ

failure, severe acid-base metabolism disorders,
cause of death was respiratory circulation failure.

and liver cirrhosis. The direct

The deceased Xiong Moumou, male, 69 years old, became ill on December 31, 2019, became worse on January 4, 2020, and was transferred to Wuhan Jinyintan Hospital for treatment. He was admitted with severe myocarditis (myocardial enzymes reached 20 times normal, Electrocardiographic abnormalities); abnormal renal function; severely impaired multiple organ function; chest CT showed pulmonary fibrous lesions and pleural effusion and pleural thickening. Considering tuberculosis and pleural tuberculosis, died at 00:45 on January 15 due to ineffective rescue.

The deceased, Chen, male, 89 years old, developed symptoms on January 13, 2020, was admitted to the hospital for severe breathing difficulties on January 18, and died on January 19 at 23:39. Patients have basic diseases such as hypertension, diabetes, coronary heart disease, and frequent ventricular premature beats.

The deceased Li Moumou, male, 66 years old, was admitted to the hospital for "intermittent cough, headache, fatigue and fever for 6 days" on January 16, 2020; dyspnea occurred on January 17, and multiple organs appeared at 10:35 on January 20. Functional failure, rescue ineffective death. The deceased had basic diseases such as COPD, hypertension, type 2 diabetes, and chronic renal insufficiency.

The deceased Yin Moumou, female, 48 years old, became ill on December 10, 2019, developed dyspnea on December 27, and was transferred to Wuhan Jinyintan Hospital for treatment on December 31. She had severe respiratory distress upon admission, January 20, 2020. At 14:31, multiple organ failure occurred, and the rescue died. The deceased had basic diseases such as diabetes, cerebral infarction and gallstones during his lifetime.

Chen

Moumou, 70 years old, was admitted to the hospital for "cough and fever for 4 days" on January 19, 2020. At the time of admission, the patient had high fever, cough, sputum, chest tightness, shortness of breath, and chest CT examination showed multiple lung infections. Diagnosis For lung infection, anti-viral, anti-infective, cough and phlegm treatments are given after admission, but the treatment effect is not good and breathing difficulties gradually increase. The patient developed shortness of breath and tachycardia at 13:00 on January 23, and the blood oxygen saturation and heart rate decreased progressively at 19:15. Clinical death was announced at 20:55 on January 23.

Cheng Moumou, female, 76 years old, was admitted to the Third Hospital of the City for treatment on January 5, 2020 due to "limited right shoulder pain activity for 4 hours". He has a history of hypertension and diabetes for many years. Upon admission, the right shoulder was swollen and painful, and his mobility was limited. X-rays revealed a comminuted fracture of the proximal right humerus. He was diagnosed with a comminuted fracture of the proximal right humerus, hypertension, and diabetes. On January 9th, symptomatic treatment was performed after rehydration of the proximal humerus fracture to prevent fluid infection and blood transfusion. On January 18, persistent fever occurred. Chest CT showed multiple infections of both lungs, coma,

shortness of breath, and progressive decrease in heart rate. Clinical death was declared due to respiratory failure at 18:09 on January 24. Deng Moumou, male, 72 years old, was admitted to Wuhan University Zhongnan Hospital on January 18, 2020 because of "cough with fever for 1 week". He had a history of chronic bronchitis. At the time of admission, the patient had high fever, cough and sputum, chest tightness, shortness of breath, and an acute illness. Outpatient chest CT showed bilateral lung infection and was diagnosed with viral pneumonia. After admission, she was treated with continuous high-flow oxygen inhalation, anti-infection, acid suppression and stomach protection. The patient gradually fell into a drowsiness and coma. At 18:30 on January 23, her heart rate and blood pressure suddenly dropped, and her heart rate and breathing decreased to 0: Blood pressure could not be measured and clinical death was declared. Hong, male, 79 years old, was transferred to the City Jinyintan Hospital on January 17, 2020 due to "intermittent fever, cough, and panting for 6 days". He has a history of diabetes and hypertension for many years. On admission, the patient was short of breath, chronically ill, and was diagnosed with severe pneumonia, respiratory failure, type 2 diabetes, and hypertension (very high risk). After admission, she received anti-inflammatory, anti-infection, non-invasive ventilator-assisted ventilation and other treatments. Respiratory failure gradually worsened and coma appeared. Clinical death was declared due to multiple organ failure at 2:50 on January 24. Le Moumou, male, 55 years old, was transferred to the City Jinyintan Hospital on January 19, 2020 due to "intermittent fever and cough for 11 days". On admission, the patient had shortness of breath, accelerated heart rate, and chest CT with viral pneumonia. He was diagnosed with viral pneumonia and respiratory failure. After admission, she received anti-infection, anti-inflammatory, non-invasive ventilator-assisted ventilation and other treatments. Respiratory failure gradually worsened and coma appeared. Clinical death was declared due to multiple organ failure at 10:15 on January 24. Li Moumou, 87 years old, was admitted to the Department of Infectious Diseases of Xiehe Hospital for "intermittent diarrhea and fever for 7 days" on January 19, 2020. He had a history of diabetes for many years. At the time of admission, the patient had low fever, chest tightness, shortness of breath, and chest CT examination. He was diagnosed with multiple lung interstitial pneumonia. He was diagnosed with fever, viral pneumonia, diabetes, and abnormal liver function. After admission, he was treated with respiratory tract isolation, high-flow oxygen, anti-virus, anti-infection, and liver protection. At 8:40 on January 23, he had difficulty breathing, and his blood oxygen saturation decreased progressively. At 18:32 on January 23, his cardiac arrest was not detected, his blood pressure could not be measured, and clinical death was declared. Liu Moumou, female, 66 years old, was admitted to Tongji Hospital for treatment on January 19, 2020 due to "fever, chest tightness for more than 10 days, aggravation for 3 days". He has a history of hypertension for many years, chest tightness, shortness of breath, and poor mentality when admitted to the hospital. Chest CT considers infectious lesions in the lungs. The admission diagnosis is fever pending. After admission, he received antiviral, anti-infective, and anti-inflammatory treatments. At 12:31 on January 21, blood pressure dropped to undetectable, and clinical death was declared. Liu Moumou, male, 58 years old, was transferred to Jinyintan Hospital of the city on January 18, 2020 due to "intermittent fever with cough for 15 days, chest tightness, and gasping for 1 day". He has a history of hypertension for many years. On admission, the patient had chest tightness, shortness of breath,

accelerated heart rate, positive coronavirus nucleic acid test, and was diagnosed with viral pneumonia, respiratory failure, hypertension, and coronary heart disease. After admission, he was treated with high-flow oxygen inhalation, anti-infection, and anti-inflammatory. On January 19, myocardial ischemia complicated with coma and shock. On January 24, he died of multiple organ failure at 2:54.

Liu Moumou, male, 66 years old. On January 11, 2020, due to fever, he developed cough and was hospitalized in Puren Hospital. He was treated with ventilator-assisted breathing for respiratory failure. On January 20, he was transferred to Jinyintan Hospital of the city to continue rescue treatment. On admission, he received high-flow oxygen, and received anti-infection, sputum reduction, and oxygen therapy support treatment after admission. He had difficulty breathing at 2:30 on January 21, and his limbs were cold. No, bilateral pupils are dilated, auscultation has no heart sounds, heart rate is 0, and blood pressure cannot be measured. Active rescue treatment such as tracheal intubation, ventilator ventilation, continuous chest compressions, anti-shock, etc., clinical death was announced due to respiratory cycle failure at 4:30 on January 21. Mr. Luo, 78 years old, was transferred to Jinyintan Hospital for treatment on January 23, 2020 because of "fever and cough for 10 days". He has a history of coronary heart disease for many years. Upon admission, the patient had shortness of breath and poor spirit. He was diagnosed with viral pneumonia, respiratory failure, and coronary heart disease. After admission, he was treated with antiviral, anti-infection, and oxygen inhalation. The respiratory failure gradually worsened, and his heartbeat appeared at 9:20 on January 24. Stop, give symptomatic treatment of Qiangxin and chest heart compression, rescue is invalid, clinical death was announced at 10:00 on January 24. Song Moumou, male, 65 years old, was admitted to the hospital on January 16, 2020 due to "chills and cough for four

days". He has a history of diabetes and coronary heart disease for many years. The admission temperature was 38.4 were abnormal. Chest CT showed multiple infectious lesions in both lungs. The initial diagnosis was acute $e^{\circ}\text{C}$, the breathing sounds of both lungs were thick, and multiple biochemical examination indexes exacerbation of chronic bronchitis, type 2 diabetes, and coronary heart disease. After admission, symptomatic supportive treatments such as anti-infection, anti-virus, and stable blood glucose were given. A re-examination of the lung CT revealed that the infection had enlarged and blood oxygen saturation plummeted. He died at 00:46 on January 23. The diagnosis of death was new coronavirus pneumonia, severe pneumonia, and respiratory failure. Wu Moumou, male, 67 years old, was admitted to the Fourth Hospital of the city for treatment on January 15, 2020 due to "dizziness and fever for 5 days". He has a history of chronic bronchitis for many years. At the time of admission, the patient had high fever, a fast heart rate, dyspnea, and an acute illness. A chest CT examination considers both lung infections. He was diagnosed with severe community-acquired pneumonia and respiratory failure. After admission, he was treated with anti-virus, anti-infection, and non-invasive ventilator-assisted ventilation. On January 18, the patient was switched to tracheal intubation to assist ventilation, and the patient's oxygen saturation was still difficult to maintain normal. Clinical death was announced at 3:01 on January 24 due to severe respiratory failure.

Yang Moumou, 58 years old, was transferred to Jinyintan Hospital of the city on January 1, 2020 because of "cough and sputum for 9 days and fever for 5 days". On admission, the patient had a high fever

and a chest CT scan suggesting inflammatory lesions in both lungs. He was diagnosed with severe pneumonia, viral pneumonia, and respiratory failure.

After admission, he received anti-inflammatory, anti-infection, and high-flow oxygen inhalation treatments. On January 16th, tracheal intubation assisted ventilation and ECMO treatment were given, followed by sepsis and septic shock. At 17:01 on January 23, the patient died of respiratory failure. Zhang Moumou, female, 67 years old, was admitted to Dongxihu People's Hospital for treatment for "one week of fever" on January 12, 2020. He has a history of diabetes and hypertension for many years. He was admitted to the hospital with poor spirit, shortness of breath and chest shortness. A CT scan of the chest revealed infectious lesions in both lungs and was diagnosed with viral pneumonia. He was treated with oxygen inhalation, anti-virus, anti-infection, and invasive ventilator-assisted ventilation after admission. The dyspnea gradually increased. At 23:07 on January 23, clinical death was declared due to respiratory failure. Zhou Moumou, female, 82 years old, was transferred to Jinyintan Hospital for treatment on January 17, 2020 due to "intermittent fever, chest pain, chest tightness, fatigue, shortness of breath for 7 days". The new hospital confirmed positive for nucleic acid and has a history of hypertension. On admission, the patient had chest tightness, weakness, and shortness of breath. The diagnosis was severe pneumonia, viral pneumonia, respiratory failure, hypoalbuminemia, and hypokalemia. After admission, he received antiviral, anti-infection, liver protection, and non-invasive ventilator-assisted ventilation. Respiratory failure gradually worsened. On January 23, he was intubated with ventilator-assisted ventilation. On January 23, 18:24 due to respiratory circulation death due to exhaustion. Source: Cited from case data published by the National Health Commission of China, Beijing Municipal Health Commission, Hubei Province Health Commission and relevant medical institutions. New crown pneumonia deaths in Shenzhen on February 16.

Case 1 Male, 66 years old, has 8 years of history of hypertension. On December 29, 2019, she went to Shenzhen to visit relatives in Wuhan. On January 3, 2020, she developed symptoms of cough, general weakness, and fever in Wuhan. She returned to deep on the 4th. On January 20, Guangdong Province was notified of the confirmed diagnosis, and his condition was critical. On February 16, his condition deteriorated and he died after rescue. Final diagnosis: 1. New coronavirus pneumonia (critically severe); 2. Severe acute respiratory distress syndrome (ARDS); 3. Septic shock,

multiple organ failure syndrome; 4. Pulmonary hemorrhage; 5. Hypertension High-risk group. Case 6 Male, 63 years old, has bronchiectasis and sleep apnea syndrome. I traveled to Wuhan on December 29, 2019, and returned to deep on January 2, 2020. On the 8th, I developed symptoms such as cough and occasional asthma. On January 20, Guangdong Province was notified of the confirmed diagnosis, and his condition was critical. On February 16, his condition deteriorated and he died after rescue. Final diagnosis: 1. New type of coronavirus pneumonia (critically severe); 2. Severe acute respiratory distress syndrome (ARDS); 3. Fulminant myocarditis; 4. Sepsis; 5. Multiple organ failure syndrome, diffuse intravascular coagulation (MODS/MOF, DIC); 6. Sleep apnea syndrome.

Wang Fusheng, et al: Anatomy and Pathology Report of Patient's Remains Lancet Medical Journal <https://www.thelancet.com/journals/lanpub/home>

Dissected tissue samples were taken from the patient's lung, liver and heart tissue. Histological examination revealed bilateral diffuse alveolar injury with fibrous mucus exudation. Significant

alveolar epithelium exfoliation and hyaline membrane formation in the right lung tissue were present, suggesting acute respiratory distress syndrome. The left lung tissue showed pulmonary edema and pulmonary hyaline membrane formation, suggesting early ARDS. Lymphocyte-dominated mononuclear cells infiltrate inflammatory infiltration in both stroma. Multinucleated giant cells and atypically enlarged alveolar cells appear in the alveolar cavity. Among them, atypically enlarged alveolar cells have larger nuclei, amphiphilic intracytoplasmic particles, and obvious multinucleated giant cells and atypically enlarged alveolar cells appear in the alveolar cavity. Among them, the atypically enlarged alveolar cells have a larger nucleus, amphiphilic intracytoplasmic particles, and obvious nucleoli, showing viral cytopathy. Like cytopathic-like changes. We found no apparent nuclear or cytoplasmic virus inclusions. On January 27, the team's pathological anatomy of patients with neocoronary pneumonia death found that the lungs of the deceased showed diffuse alveolar injury and pulmonary hyaline membrane formation, consistent with ARDS, and the overall pathological findings were similar to SARS and MERS. Flow cytometry can detect lymphopenia, but lymphocytes are also overactivated. In addition, the increase in highly pro-inflammatory CCR4+CCR6+Th17 cells may partially explain these severe immune damage in the lungs.

***** 5. Virological research and various coronaviruses

The virus has various forms, spiral Regular icosahedron Enveloped Compound DNA virus RNA virus Retrovirus

Middle East Respiratory Syndrome Coronavirus (MERS-CoV) The pathogenic examination mainly includes virus isolation and virus nucleic acid detection. Virus isolation is the "gold standard" for laboratory testing. Viral nucleic acid detection can be used for early diagnosis. A variety of specimens (pharyngeal swabs, nasal swabs, nasopharyngeal or tracheal extracts, sputum or lung tissue, and blood and feces) should be collected for testing in time. The lower respiratory tract specimens have a higher positive detection rate. 1. Viral nucleic acid detection (PCR). RT-PCR (preferably real-time RT-PCR) is used to detect MERS-CoV nucleic acid in respiratory specimens. 2. Virus isolation and culture. MERS-CoV can be isolated from respiratory specimens, but it is generally difficult to isolate and culture in cells.[1]

SARS-CoV Severe acute respiratory syndrome coronavirus (SARS-CoV)

1. SARS-CoV RNA detection: The SARS-CoV RNA positive judgment criterion is that the PCR test results meet one of the

following three items can be judged as positive. (1) At least two clinical specimens from different locations (eg, nasopharyngeal secretions and stool) should be tested positive. (2) Collect the same clinical specimens that are tested at least 2 days apart (for example, 2 or more nasopharyngeal secretions). (3) Use two different methods for the original clinical specimens in each specific test, or repeat the PCR test positive from freshly extracted RNA from the original specimens. Confirmation of PCR test results: ① Repeat the PCR test using the original specimen; ② Test the same specimen in a second laboratory. 2. Detection of SARS-CoV specific antigen N protein: Qualitative detection of SARS-CoV nucleocapsid (N) antigen in serum or plasma samples for early auxiliary diagnosis of SARS-CoV infection. 3. SARS-CoV specific antibody detection: Specific antibody detection and diagnosis of SARS criteria can be diagnosed as SARS if one of the following two is met. (1) The serum antibodies in the acute phase and

these serum antibodies in the recovery phase were detected in parallel and found to be positive. (2) Parallel detection of serum antibodies in the acute phase and serum antibodies in the recovery phase revealed that the antibody titer was increased by 4 times or more.[1]

FeCV Feline Coronavirus FeCV Feline infectious peritonitis (FIP) is one of the important causes of cat death, from 3 months to 3 years of age cats and cats older than 10 years of age, especially in those purebred cats and other numbers and types that are kept together Domestic cat. Feline coronavirus FeCV (Feline enteric Coronavirus) is a highly infectious virus and prefers to occur in a large number and variety of domestic cats. FeCV poses great danger to cats, and FeCV-positive is often considered a prelude to FIP. The most fundamental way to control cat FIP is to prevent and control FeCV. FeCV is one of a wide range of feline coronaviruses (Feline Coronavirus (FCoV)). The presence of FeCV antibodies only indicates the possibility of FeCV virus being present and / or infected with FIP. A positive result for FeCV antibodies does not necessarily mean that the cat has FeCV virus and / or FIP infection, and should be judged in conjunction with other clinical symptoms. However, negative results may indicate the absence of FeCV virus and / or infection with FIP. The wells of the microtiter plate are coated with purified coronavirus antigen. Protein A extracted from *Staphylococcus aureus* is combined with HRP to form a complex. Serum or plasma samples are incubated with protein A enzyme markers in the wells of the microplate. If FCoV antibodies are present in the cat sample, the antibodies will bind to the antigen in the well and then to the protein A enzyme label. The excess enzyme-labeled protein A was washed away and a chromogenic substrate was added. A clear blue color indicates the presence of FCoV antibodies, and no color change indicates no FCoV antibodies. The kit has high specificity and sensitivity, simple operation, and the results can be known within 30 minutes. The kit includes positive quality control and negative quality control. Just by comparing the color with the negative quality control with the naked eye, you can accurately determine the presence of FCoV antibodies in the sample.

Virology is a science that studies the smallest non-cellular biological virus on the planet. As a type of biological factors in the earth's biosphere, humans have also experienced the nature of the virus and its life laws. In a century, virology has achieved tremendous development and has become an important branch of science in the field of life sciences. The content of virology research involves various aspects of life activities such as virus type, composition, structure, metabolism, growth and reproduction, genetics, evolution, distribution, and the relationship between viruses and other organisms and the environment. Virology Research and Life Science Medical virology is an important branch of virology, which mainly studies the characteristics of viruses from a medical perspective, sometimes called medical molecular virology. The scope of medical virology research includes the nature of viruses, transmission modes and pathogenic mechanisms, as well as application-level drug and vaccine research. It is closely related to molecular biology and pharmacology.

6. Comparative study of Sars disease and new coronavirus pneumonia 2019-nCoV acute respiratory disease and Middle East respiratory disease

Although Sars disease and 2019-nCoV acute respiratory disease (new coronavirus pneumonia) are very different, such as gene maps, viral molecular structures, etc., from a large number of pathological cases and death pathological cases to analyze and compare, Diseases such as new

coronavirus pneumonia and Sars have great homology and iatrogenic inheritance and variability. In fact, this type of new coronavirus pneumonia and Sars belong to the same disease category. Its symptoms, pathology, medical history, death symptoms, transmission, incubation period, large-scale spread and epidemic, no effective drugs and vaccines for prevention and treatment, strong transmission, incubation period and asymptomatic spread and so on are quite consistent with Sars, etc. Waiting for danger and rapid, so is the harmful contagion. Although the disease is quite different from Sars, the heritability of homology variability is undeniable. The new coronavirus pneumonia 2019-nCoV acute respiratory disease is not Sars, but its homology, heredity, and variability are indeed many experimental evidences and studies including pathological cases, various clinical data, etc. can be proved. This is beyond doubt. Of course, whether the source of the disease is the same as that of Sars is another reason. Coronaviruses may be homologous, genetically mutated, or new evolutionary classes, and still require a lot of research and medical trials.

SARS-CoV-2, SARS-CoV) or SARS-CoV Severe acute respiratory syndrome-related coronavirus

"The incubation period is 1 to 16 days, usually 3 to 5 days. The onset is acute, highly contagious, with fever as the first symptom, chills, body temperature often exceeds 38 ° C, irregular or relaxation fever, and residual heat. The heat course is usually 1 to 2 weeks; accompanied by headache, muscle soreness, general weakness, and diarrhea. Dry cough, sputum loss, occasional blood-tinged sputum, and pulmonary signs are not obvious 3 to 7 days after onset. Within 1-3 days of onset, 88.1% of patients had fever, 25-36% of patients had chills, headaches, sore throat, muscle pain, and joint pain, and 8.4% of patients had chills. Outside) On the 4th day, the decrease was marked; onset of 1-3 days, laboratory tests, 70.3% of patients were infected.

Severe acute respiratory syndrome results from autoimmunity. Like lupus erythematosus and psoriasis, the fibers of the lungs are affected by autoimmunity, which swells excessively and squeezes the alveoli. The alveoli cannot swell. The symptom is that they do not inhale air and suffocate to death. The specific form is that the immune system overprotects pathogens that have not been met, and mobilizes through the blood circulation to release a number of cytokines across the alveoli, causing "acute inflammation". The released cytokines can envelop more immune cells, produce more cytokines, and then attack the virus-infected cells. After the infected cells die, they will have a more severe inflammatory response. Therefore, the human body is not supported because of this aggravated immune response, thereby causing acute immunopathological damage.

A "suspected case" is defined as a person with a history of the following conditions after February 1, 2003: High fever above 38°C (100.4°F) and One or more of the following respiratory symptoms: Dizziness symptoms Shortness of breath Difficulty breathing Hypoxia pneumonia cough In addition to a high fever and one respiratory symptom, one or more of the following conditions are also needed: Intimate contact with a suspected patient (e.g. living together), or Recently visited a region with severe acute respiratory syndrome infection.

In addition to fever and respiratory symptoms, other symptoms associated with SARS include: headache rigid muscles Loss of appetite Weak body Mental disorder Rash diarrhea White blood cells and platelets usually become low Chill tremble Symptoms appear 2 to 7 days after infection. Severe patients require a machine ventilation system. The World Health Organization recommends isolation of suspected patients. Antibiotics have no effect, while antiviral drugs such

as ribavirin and oseltamivir have weak effects. Glucocorticoids relieve inflammation and save patients' lives mainly by suppressing the immune response.

In the course of treatment, in order to save lives, doctors used a large number of hormonal drugs for emergency treatment of SARS. The side effects of hormones caused necrosis of femurs in some patients. The bone necrosis caused by the excessive use of hormones caused patients to lose their ability to work or even take care of themselves after recovery. The huge psychological gap has also caused depression in some SARS patients.

Wuhan Pneumonia (New Coronavirus Pneumonia) Found: Wuhan, China

Pathogens: New Coronavirus (2019-nCoV) Virus source: Undecided way for spreading:

- Animal to human (not yet determined)
- From person to person, it is initially determined that it can be transmitted through droplets or through other close contacts.

Infectious power: It is contagious during the incubation period (period without symptoms), so there are "silent communicators". symptom: • Mainly fever, cough and dyspnea • The infected person may have mild or asymptomatic symptoms, or they may have severe symptoms or even be dying. Incubation period: about 10 days, with a minimum of 1 day and a maximum of 14 days.

Cases also have a latency period of several months. Individual patient differences and other reasons.

Treatment method: There is no specific treatment method, and the main treatment is symptomatic relief and supportive therapy.

Scope of spread: It is spreading globally, mainly in Hubei Province, China.

SARS (Severe Acute Respiratory Syndrome) Found: Guangdong, China Pathogen: SARS coronavirus

Source of the virus: bat—civet

Transmission method: person to person, spread through droplets, or contact with patients' secretions or body fluids. Infectiousness: Infected people are usually infectious only after symptoms appear, especially in the second week after onset. symptom:

- At first, the fever is higher than 38°C, and it may be accompanied by chills, headaches, and general pain.

- Some patients have symptoms such as cough and diarrhea.

Incubation period: 2 to 7 days, up to 10 days. Cases also have longer days. Individual patient differences and other reasons. Treatment method: There is no specific treatment, and the main treatment is symptomatic relief and supportive therapy.

Scope of spread: It spreads to 24 countries around the world, mainly in mainland China.

MERS (Middle East Respiratory Syndrome) Found: Saudi Arabia

Pathogen: Middle East Respiratory Syndrome Coronavirus Source of the virus: bat-camel

way for spreading: • Animal to human, such as a domestic camel

- From person to person, spread through droplets or other close contacts

Transmissibility: Contagious during asymptomatic periods. However, interpersonal communication is limited, and it is limited to family members, patients and medical personnel. symptom:

- Fever, cough and shortness of breath.
- Some patients have symptoms such as diarrhea and vomiting. There are also patients with mild or asymptomatic symptoms.

Incubation period: usually 5 to 6 days, with a minimum of 2 days and a maximum of 14 days. There are special cases, individual differences and other reasons. Treatment method: There is no specific treatment, and the main treatment is symptomatic relief and supportive therapy.

Scope of transmission: mainly concentrated in the Middle East such as Saudi Arabia. Source: U.S. Centers for Disease Control and Prevention, World Health Organization, etc., Wikipedia, Encyclopedia, Encyclopedia Britannica, Encyclopedia of Medicine, etc.

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---- Divers Coronavirus Pathologie Pharmacologie et traitements symptomatique Technologie médicale d'urgence 2019 Mots clés virus présence naturelle physicochimie quantique des coronavirus

(Editor: Vott.G 17 February 2020 Geneva)